

Claims

1. Safety device for lifting a bonnet (1) of a motor vehicle in the event of a collision, the said bonnet
5 (1) comprising a structure allowing it, in normal operation, to be opened or closed about an axis (10) known as the rotation axis, the device being situated under the said bonnet (1) and comprising a mechanism (2) for lifting the said bonnet, an actuator (3)
10 actuated using a gas generator (31) and a device for locking the said lifting mechanism, the said lifting mechanism (2) comprising a link rod (20), the said device being characterized in that the actuator is able to cause a translational movement of the lifting
15 mechanism in order to unlock it, followed by a rotation of the link rod of the said mechanism in order to deploy the said lifting mechanism (2).
2. Device according to Claim 1, characterized in that
20 it can be fitted onto the structure used for the normal operation of the bonnet (1).
3. Device according to Claim 1 or 2, characterized in that the mechanism (2) for lifting the bonnet (1) is
25 articulated about the rotation axis of the bonnet (1).
4. Device according to one of Claims 1 to 3, characterized in that the device for locking the lifting mechanism (2) consists of two complementary
30 shapes able to collaborate with one another to lock the lifting mechanism (2), one of these shapes being secured to the lifting mechanism (2) and the other to a part (5) that is fixed with respect to the vehicle.
- 35 5. Device according to one of Claims 1 to 4, characterized in that the link rod (20) is pivot-mounted at one of its ends about an axis (21) known as the pivot axis which is fixed with respect to the vehicle and is articulated at its other end to the

bonnet (1) about the rotation axis (10) of the bonnet (1).

6. Device according to Claim 5, characterized in that
5 the link rod (20) is slideably mounted at each of its ends with respect to, on the one hand, the rotation axis (10) and, on the other hand, the pivot axis (21).

7. Device according to Claim 5 or 6, characterized in
10 that the actuator comprises a piston (33) secured to a rod (34), the said piston (33) being able to move in a chamber (32) under the action of the gases generated by the gas generator (31).

8. Device according to Claim 7, characterized in that
15 the rod (34) can be extracted from the actuator (3) in a horizontal direction, the lifting mechanism (2) converting the horizontal movement of the rod (34) into a vertical movement for lifting the bonnet (1).

20 9. Device according to Claim 8, characterized in that it comprises means for slowing the return movement of the rod (34) in the chamber (32) of the actuator (3).

25 10. Device according to Claim 8 or 9, characterized in that the rod (34) of the actuator (3) is secured to the link rod (20) at a point that is offset with respect to the pivot axis (21) of the said link rod (20) and with respect to the longitudinal axis of the link rod (20)
30 and situated in a horizontal plane below the one containing the pivot axis (21) of the link rod (20).

11. Device according to Claim 10, characterized in
35 that the rod (34) comprises an end able to slide in an oblong opening (201) formed on the link rod (20) to cause the link rod (20) to rotate about its pivot axis (21).

12. Device according to one of Claims 1 to 11, characterized in that the link rod (20) is made from a deformable material.

- 5 13. Device according to one of Claims 1 to 12, characterized in that the actuator (3) is fixed to a deformable support that is fixed with respect to the vehicle.